California GARDEN

JULY-AUGUST 1997 Volume 88 No. 4 $1.50

HORTICULTURAL CALENDAR

THROUGH JULY 6

DEL MAR FAIR Flower & Garden Show. Via de la Valle west to Fairgrounds. 793-5555. Parking and Entrance Fees.

JULY 5th TO 11th

CACTUS & SUCCULENT SOCIETY OF AMERICA 27th Biennial Convention. Town & Country Hotel, San Diego. With expanded program and many fine speakers. Call Martin Mooney for all information 427-6796.

JULY 19-20

S. D. ARTISTIC PLANT & LANDSCAPE ASSOC. 5th Show. Casa del Prado, Balboa Park. Sat. 1-4:40PM; Sun. 9AM-4PM. Free.

AUGUST 2-3

SOUTH BAY BROMELIAD ASSOCIATION Show & Sale. South Coast Botanic Garden Foundation. 26300 Crenshaw Blvd., Palos Verdes Peninsula. Sat. Noon-4:30PM; Sun. 10AM-4:30PM. 310/544-1948. $5.

AUGUST 2-3

S.D. COUNTY DAHLIA SOCIETY 57th Show. Casa del Prado, Balboa Park. Sat. 1-5PM; Sun. 11AM-4PM. Free.

AUGUST 2-3

THE HUNTINGTON Bonsai-A-Thon Demonstration. 1151 Oxford St., San Marino. 10:30AM-4:30PM. 818-405-2141. $7.50.

AUGUST 16-17

S. D. FERN SOCIETY Plant Show. Casa del Prado, Balboa Park. Sat. 12:30-5PM; Sun. 10AM-5PM. Free.

AUGUST 23-24

HON NON BO ASSOCIATION Show & Sale. Casa del Prado, Balboa Park. Sat. & Sun. 10AM-5PM. Free.

AUGUST 30-31

S. D. TURTLE & TORTOISE SOCIETY 23rd. Show. Casa del Prado, Balboa Park. Sat. & Sun. 9AM-5PM. Free.

EVERY SATURDAY

FULLERTON ARBORETUM Programs. 1900 Associated Rd., Fullerton. 714/773-3404.

MONTHLY - SECOND MONDAY

SAN DIEGO HORTICULTURAL SOCIETY. Speakers. Wagering Facility, Del Mar Racetrack. Mon. 6:30-9PM. 756-4126.

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TUES. INTERPRETIVE WALKS Ranger guided. Meet Visitors Center. 10AM. 235-1211. Free.

THUR. THE ARBORETUM OF LOS ANGELES Series of Four, **Tour & Taste.** July 10th, Victorian Rose Garden. July 24th, Perennials. August 7th, Dr. J. Bauml. August 21st. N. Holmes narrates tour. 301 N. Baldwin Ave., Arcadia. 6PM. RSVP Supper. 818/447-8207.

JULY - AUGUST

DESCANSO GARDENS 1418 Descanso Dr., La Canada Flintridge Call for schedule of Performing Arts Festival & Programs 818/952-4401. Events free with admission.

Deadline for submission to HORTICULTURAL CALENDAR for Sept./Oct. issue is July 15. SAN DIEGO FLORAL ASSOCIATION *is not responsible for changes that are submitted late by the organizations.*

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JULY-AUGUST 1997

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COVER photograph by Joseph A. Betzler is of a part of Baja Garden at the Wild Animal Park. Plants are *Fouquieria columnaris* (boojum trees in center) and *Agave shawii* (coastal agave to the right).

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Gleanings . . .

OLD SEEDS . . .
Ever wonder if the vegetable seeds you forgot to plant last year will grow? Seeds are amazingly long lived if kept in a cool, dry place. A rule-of-thumb is that carrot, onion, and corn seeds are good for one year; pea, bean, pepper, radish, and beet seeds are viable for three years; and cabbage, broccoli, Brussels sprout, cucumber, melon, and lettuce seeds are viable for up to five years. It probably would be best if more seeds than recommended were planted, because there probably will not be 100% germination.

RAISINS . . .
It is estimated that 85% to 90% of the raisins produced in the world are grown and processed in the California Central Valley. The common raisin is the dried Thompson seedless grape. The small grapes begin to form on the vines in late April or early May and continue to grow (mature) until late August when they are harvested. The black raisins are produced by drying the grapes in the sun on paper trays for three weeks. The golden raisins are produced by dunking the grapes in hot water, treating them with sulfur and withering them in a special drying oven.

TOMATO UPDATE . . .
When transplanting small plants, it will be more successful if the bottom set of leaves are removed and the plant is buried up to the next set. Roots will form all along the buried stem. The plant will be sturdier near the ground. Tomatoes need to be deeply watered, but not too often. Tomato roots grow deep and can use underground moisture. Plants do not do well if allowed to get too dry. If the watering is too erratic the fruit will split.

If a good amount of compost is dug deeply into the soil before planting, not only will the plants be healthier, but moisture will be retained better.

SUCCULENTS . . .
We've had many questions about the difference between succulents and cacti. So here is a short answer. The word *succulent* is a description of the part of a plant that is thick and fleshy and has tissue that can store water. Cacti are part of the family Cactaceae and most cacti have thick succulent stems and spines instead of leaves. Usually when the gardener uses the word *succulent* it can include euphorbias, sedums, crassulas, agave, kalanchoe, etc. Even though they are succulents, the cacti are often named while the others are lumped together. That is why you will often see advertisements for "cactus & succulents" even though a great variety of other species are being sold.

CSA-WEST . . .
This is a new kind of agribusiness that is becoming popular. CSA stands for community-supported agriculture. Members, who usually live in cities and cannot have a garden, pay a weekly fee and receive a weekly fresh-picked supply of food from the farmer who does the growing. To keep the members happy, the farmer must grow a variety of foodstuff, often exotic varieties of ordinary vegetables, herbs, etc. Members look for recipes for the food, not food for the recipes. These farms are registered and if you wish to find one in your city contact CSA-West at Box 363, Davis CA 95617.

GLOBAL WARMING . . .
We surely hear about it, but there is very little true information—just alarms. Using satellite information scientists report that greening during the peak summer growing months of July and August above the 45th parallel has gone up as much as 10%. (The 45th parallel is half way between the equator and the North Pole.) By studying data from 1981 to 1991, it was found that the beginning of the growing season was earlier and the end later. (It continued through 1994.) It is felt that this is due to higher levels of carbon dioxide in the air and higher temperatures—both of which stimulate photosynthesis (the process by which the green cells in plants convert gasses to carbohydrates). Research also indicates that the temperature has increased 1° F. in the last one hundred years.

Nobody really knows for sure what is happening on this big globe we call home, there can only be educated guesses. All we do know is that we have surely been having some unusual weather this year, fortunately all good here.

A CONEFLOWER TO LIGHT UP ANY GARDEN

by CATHERINE ZINSKY

CONEFLOWERS ARE FUN. All coneflowers belong to the Compositae and generally have daisy-like blossoms with conical centers, hence the name coneflower. *Rudbeckia nitida* 'Autumn Sun' is merely one example of this rather extensive tribe, but an exemplary one to be sure!

Most gardeners are familiar with the rudbeckia, commonly referred to as the gloriosa daisy. *R. nitida* 'Autumn Sun' bears almost no resemblance. Both are perennials, but 'Autumn Sun' is glabrous, meaning the leaves and stems are without hairs of any kind. The blue-gray foliage of the gloriosa daisy is hirsute: it is quite hairy. 'Autumn Sun' has lovely deep-green foliage that, when out of flower, stands 18-24 inches tall. The leaves are deeply divided into lance-shaped leaflets, which themselves are further cut. The thick, mounded cluster of tall leaves in the perennial bed quite resembles a small shrub initially, but then it happens: summer arrives and the flower spikes begin to emerge.

Rudbeckia nitida 'Autumn Sun'

Like no rudbeckia you've ever seen, *R. nitida* 'Autumn Sun' glories in the sun, reaching for it by sending up stout, erect, thick stems to about seven or eight feet! And these branching stems are virtually teeming with bright-yellow, daisy-like blossoms, which have typical coneflower centers, remarkable only in their color: the centers of 'Autumn Sun' are a pale—almost chartreuse—green. The finished product is stunning, yet sublime.

Like most rudbeckias, 'Autumn Sun' does best in full sun with regular watering. Snails and slugs love to nestle in the deep, cool foliage and need to be attended to, but save for these slippery critters, 'Autumn Sun' is pest free. There have been years when my own specimens have required support (staking) due to heavy winds, but generally they are self-supporting.

The foliage clumps of this unique perennial will require dividing every three to four years, which is the best way to propagate as well. Mine have never reseeded; however, I have rarely left a stem on long enough to test this method out. *R. nitida* 'Autumn Sun' is a superb cut flower, lasting ten to fourteen days in a vase. Moreover, once the petals dry and fall off, the bare stems with the chartreuse cones remain, and they, too, are excellent arrangement material.

All in all, this is a perennial that has many attributes: it is lovely in and out of flower, is easy to care for, and has long-lasting, stately flowers that begin blooming in early summer and continue into the fall. If you love bright and tall, this is a must for you.□

Good luck and happy gardening.

Catherine Zinsky gardens at about 1900 feet in Crest. She is a free-lance writer for garden and canine publications.

HON NON BO
Miniature Vietnamese Landscape
by LIT PHAN

FOR THOUSANDS OF YEARS Vietnamese people have worshipped mountains because they believed that there were sacred spirits in mountain caves. It was believed that these spirits built paradise mansions in order to isolate their sacred world from the human world. People made an effort to enter this sacred world so that they would never die.

It was not possible for people to live near a cave in the mountains, so they created in their own homes a HON NON BO with water, stones set together to look like mountain ranges, and plants. They also added figures of birds, animals, structures, and people. *HON* means island; *NON* means mountain; and *BO* means the combination of water, mountains, and forest. Another meaning of BO is to walk around and enjoy the scenery. The oldest known HON NON BO in existence in Vietnam dates from the 10th Century.

The symbolic meaning of the sections of a HON NON BO is that the top is nature—sky, clouds, stars, moon, and mountain. The middle section is man who is between nature and earth. Man carries nature (heaven) on his head and his foot touches the earth. The person building the HON NON BO or the observer walking around represents man. The lower section is earth represented by soil and water.

There are two categories of NON HON BO. One is Natural Occurring Scenery—a miniature version of a real natural scene. An example would be a scaled-down version of Half Dome in Yosemite or the Grand Canyon, or Ha-Long Bay in Vietnam, etc. The second is Imaginative Imagery—scenes from Heaven, or imagined Mother Love theme, etc.

The main components of a HON NON BO are:
[1] A water container. It can be rectangular, square, or round. It can be small and shallow for mobility or big and deep to be used in the garden. (It can be constructed in an aquarium to enhance the feeling of tranquility and life-like scenery.)
[2] Rocks, stones, and pebbles used to create images of mountains and/or desolate islands.
[3] Plants or small trees.
[4] Decorations as needed, such as houses, pagodas, birds, bridges, etc. Four conventional human figures (fisherman, wood-cutter, farmer, and scholar) depicting people mentioned throughout Vietnamese literature and generally associated with tranquility and peacefulness are used.

General rules are that a mountain range should be constructed from the same type of stone. The arrangement is more effective when it forms an irregular triangle. A lighter color can be used for stones in the background if attempting to create an illusion of a distant mountain. A small tree makes the mountain look higher. The water container should be of the same color as the stones but sometimes white or a chocolate color is used.

Rocks can be difficult to stabilize. For small designs the base of a rock can be flattened with a hacksaw or chisel. Large rocks will need a common base constructed of mortar to assemble several rocks. Care must be taken to ensure that the artificial base is the same color as the rocks and looks like a natural rock formation. In very large HON NON BO it will be necessary to use ropes, supporting poles of wood, etc. to retain the shape of the design as the cement cures.

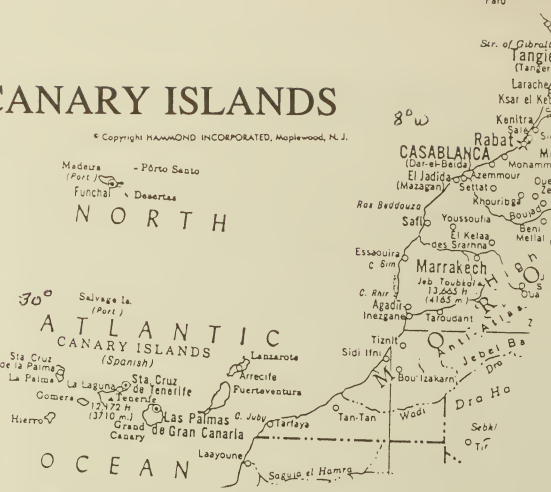
Vietnamese people like to live with a tranquil internal feeling and they feel rejuvenated whenever they look carefully at a HON NON BO. □

Lit Phan is president of the HON NON BO Assoc. He has won many awards for his plants, both in Vietnam and the United States. He has been the gardener for the Cactus Garden in Balboa Park for eight years.

A Hon Non Bo Show and Sale to be held on Aug. 30-31. See page 98.

SUCCULENTS OF THE CANARY ISLANDS

by PHYLLIS FLECHSIG



WE IN SOUTHERN CALIFORNIA share with only four other regions of the world a climate characterized by summer drought and winter rainfall. This is known as a Mediterranean climate, and it also exists in part of the South African Cape, southern Chile, south and southwest Australia, and, of course, the Mediterranean coast and its nearby outliers, including the Canary Islands. The Canaries consist of seven large islands and a few small ones, just off the northwest coast of Africa. The five outermost islands, named La Palma, Tenerife, La Gomera, El Hierro, and Gran Canaria, are volcanic in origin and have peaks of over 12,000 feet; the northeast trade winds sweep into these peaks, producing winter snows at high altitudes. Lower, on the southern sides of the islands, the climate is warm and dry. The two islands nearest Africa, Lanzarote and Fuerteventura, are thought to have split off from the mainland and are lower, flatter, and hotter than the others. Many plants in the Canaries are relics of vegetation that once was common in all the Mediterranean but has become extinct everywhere else because of the Ice Ages and the drying out of the Sahara region. These islands were protected from both events by the mitigating influence of the Atlantic Ocean; the result is a high degree of endemism—that is, many plants are found nowhere else.

Succulent genera found in the Canaries include *Monanthes, Aichryson, Aeonium, Greenovia, Euphorbia, Ceropegia, Caralluma, Sedum, Senecio,* and one *Dracaena*—the famous dragon tree.

Monanthes, in the Crassula family, are very small mat-forming plants that nearly disappear in summer. Of the more than a dozen species, we seldom see more than a few kinds, such as *M. muralis, M. subcrassicaulis*, and *M. polyphylla*. These grow mainly on walls, rocks, and cliffs.

Aichryson, also in the Crassula family, is another tricky little plant, often annual or biannual. If left alone, it will happily sprout in another plant's pot and produce fuzzy little leaves and pretty yellow flowers. Another cliff dweller, it prefers shady places.

Aeonium, another Crassula family member, is a familiar genus of large or small rosette plants whose principal native country is the Canary Islands, though a very few species can be found in other Mediterranean localities, other islands (such as Madeira), and even as far away as Ethiopia. Still, the vast majority are from the Canaries and nowhere else—more than thirty species. To name a few: the somewhat hairy-leafed *A. canariense; A. simsii*; the small *A. sedifolium; A. haworthii*, with pink flowers; *A. decorum*; and the large, flat *A. tabuliforme*. This last is spectacular when well grown, but it usually does not offset, and it will die after it blooms. It grows in rock crevices on cliffs, a habitat that tells us it wants perfect drainage! *A. lindleyi* has sticky leaves, something like our *Dudleya viscida*, and its juice is claimed by some to be an antidote to toxic euphorbia sap. Most aeoniums have somewhat woody stems; the flowers are mostly yellow but sometimes pink or white, borne in large, showy panicles. A rosette usually dies after bloom. Aeoniums are very popular plants for the succulent garden.

Greenovia, yet another Crassula, consists of four species all endemic to the Canaries, where it grows on rocks and dry walls. It is distinguished from other close plant relatives by the larger number of flower parts—eighteen to thirty-two versus six to twelve in *Aeonium*. *Greenovias* have cup-shaped rosettes that shrink in the dry season until they look like green rosebuds.

Euphorbia is well represented in these islands, though some species are not succulent and will be omitted here. The largest and most conspicuous, occurring on all seven major islands, is *E. canariensis*. It is a handsome cluster of upright stems reaching about five feet; the stems are four- or five-sided, dark green at first, then fading to gray-green, with short paired spines. Seed capsules are large and red. *E. aphylla* is a short shrub with many branching stems, no spines, and tiny, short-lived leaves so that the overall look is of a leafless plant, as the specific name implies. *E. handiensis* is a rare, endangered plant from the Jandía peninsula of the island of

Fuerteventura. It grows as a low cluster of short, spiny stems, and its habitat is fast being destroyed by off-road vehicles rented by tourists. *E. lambii* is a leafy shrub, not very succulent but easily grown. The euphorbias mentioned above are all endemic to the Canaries; others, not endemic, are *E. balsamifera* and *E. obtusifolia* (now thought to include the old species *E. regis-jubae*).

Ceropegia, in the milkweed family, is represented by three to six (depending on your authority) upright, thick-stemmed species. Most African ceropegias are vines, but the Canarian ones are all short-stemmed shrubs, gray-green to brownish, with leaves only on new growth. Flowers are yellow except in *C. fusca*, where they are brown. *C. dichotoma, C. hians*, and *C. fusca* are the ones most often seen in cultivation.

Caralluma, also a milkweed, has only one species in the Canaries: *C. burchardii*, with erect four-angled stems and small purplish-brown flowers.

Sedum is represented by two small, insignificant species, one of them an annual.

Senecio kleinia is the only succulent member of this genus in the islands, though there are other, nonsucculent senecios there. This one grows on rocky slopes along with *Euphorbia canariensis*.

Dracaena draco, the only species of this genus on the islands, has become rare on its native islands of Tenerife, La Palma, and Gran Canaria, but it is quite familiar to us as a large landscape plant; it becomes a tree with many fat branches at the top of a single trunk and long sword-shaped leaves. The red sap is a resin that once was sold as "dragon's blood" and fetched a high price a few centuries back. It is easily grown from seed.

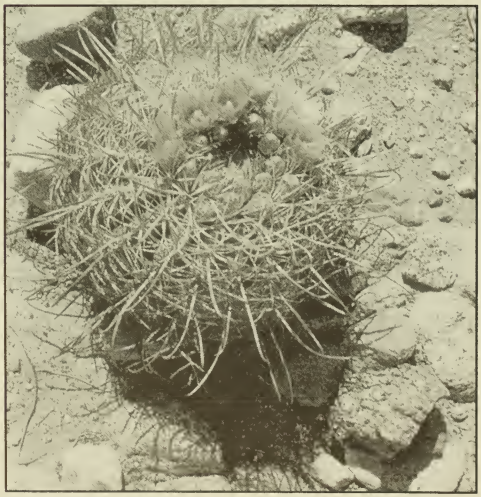
Overall, the succulents of the Canaries form an interesting and unique group that do not require summer water and are therefore very useful in dry landscapes. Most are easily grown though tender to frost; a few are quite challenging. □

PHYLLIS FLECHSIG grows a great many succulents in her garden at Encinitas, and is a volunteer at Quail Botanical Gardens, propagating many of the succulents for the gift shop there.
Photo by J. Coleman

This article first appeared in the bulletin of the San Diego Cactus and Succulent Socity, Espinas y Flores, in November 1994.

Dracaena draco growing near the intersection of Park Boulevard and Village Place in San Diego, California

Ferocactus acanthodes, barrel cactus, photo by Joseph A. Betzler



VOLUNTEERS TAKE CARE OF A LITTLE BIT OF BAJA

by JOSEPH A. BETZLER

ABOUT FOUR YEARS AGO, I joined Tom Parks, Frank Thrombley, Bob Herbst, and Al Resnick as a volunteer of the Baja Garden at the Zoological Society of San Diego's Wild Animal Park. The "Baja Hill" is a collection of plants from Baja California, Mexico. Most of the plants are from the central desert region of Baja California, especially areas from Cataviñá to Bahía de los Angeles. This collection is the largest of its kind outside of Baja. About three acres are carefully planted, and there is room for expansion.

In 1979, Jim Gibbons discovered the flora of Baja and decided to incorporate a garden of plants from this area. Jim was the horticulturist at the Wild Animal Park, and he was able to get proper collecting permits. The first letter to the Mexican Government was drafted in the fall of 1979. In the summer of 1980 Jim had his permit with the provision that samples of these plants would be sent to the Mexican Agriculture Department each time he collected. Meanwhile, a six-acre hill at the Wild Animal Park was chosen as the site for the Baja Hill. Paths across the hill were laid out by the California Conservation Corps. Some chaparral was removed, but the majority was left in its natural state.

In the autumn of 1980 to the spring of 1985, about twenty collecting trips took place. About two thousand plants from these trips have been reestablished at the Park. These plants and others form the Park's outstanding replica of Baja's central desert. Currently, collecting any plants in Mexico is prohibited; the United States will confiscate any plants that come through the border.

Of the collected specimens at the garden, the unique and key plants are the boojum trees, *Fouquieria columnaris*. They are specially adapted to survive during periods of drought. Native people from Baja refer to these plants as the *cirio*. *Cirio* is Spanish for candle, which the tall mature plants resemble in shape. There are around two hundred of these trees at the garden; they range in height from six to twenty-five feet. Related to our ocotillos in the Anza-Borrego Desert, they resemble upside-down carrots with a thick trunk tapering to a thin apex. Soon after rains, the flowers appear as a white crown at the top of the trees.

Other notable plants that form the foundation of the collection are the *cardón* (*Pachycereus pringlei*), coastal agave (*Agave shawii*), the old man cactus of Baja (*Lophocereus schottii*), and barrel cactus or *biznaga* (*Ferocactus acanthodes*). The tallest cacti in the Baja Garden are not saguaro, they are *cardón*. These large columnar cacti actually grow over twice as fast as Arizona's saguaros and form stouter bodies. When you see the plants at the garden you may notice that as they get taller the heavy spination changes. At the top of the tall stems the spines disappear. These features and the flowers differentiate them from their Arizona cousin. They grow quite well at the Park and the mature specimens flower regularly as well.

The coastal agave, *Agave shawii*, also does quite well at the park, and seedling plants are to flowering size already, after about ten years. These dark-green plants form a rosette that may have a diameter of up to six feet. At the garden, many plants will form clumps that are armed with spines on the tips of the leaves and sharp teeth along the edges of the leaves. *Lophocereus schottii* is a relatively spineless cacti until the stems mature. The mature stems start forming special grey-to-white spines. From this special area the pale-pink flowers are borne. These plants can get quite massive, though the stems do not attain the girth of the *cardón*.

Barrel cacti form a prominent part of the Baja and native San Diego flora. *Ferocactus acanthodes* is seen in Baja and our local dry areas. This species forms yellow flowers in the spring. The barrel cacti at the Baja Hill are quite diverse: withstout specimens covered with vicious hooked spines to plants with straight spines that are up to eight inches long.

There are over one hundred species in the garden, mostly cacti and succulents. In addition to those genera listed, there are representatives in: *Asclepias, Bergerocactus, Bursera, Dudleya, Echinocereus, Euphorbia, Ferocactus, Ficus, Fouquieria, Ipomoea, Jatropha, Mammillaria, Myrtillocactus, Nolina, Opuntia, Pachycormus, Pedilanthus, Peniocereus, Stenocereus and Yucca.* There is not enough space here to list all the species.

There have been introductions of Baja native plants, other than succulents, in the past few years. The garden volunteers are also actively propagating plants in the garden to replace and supplement future plantings. Occasionally the park will get calls from those wanting to make individual donations of cacti for the garden. To donate plants for the Baja Hill, field collection data must accompany the material. The volunteers are persnickety about the plants they let into the garden.

The most important donation to the Baja Hill comes in the form of volunteers. Currently the volunteers who commit to a (continued on page 120)

HAWAIIAN ARBORETUM

by ROBERT HORWITZ

WHEREVER I TRAVEL, I go to the local gardens to see what I can learn and to make comparisons to our gardening here. I have just returned from a month's long trip to Hawaii, Australia, and Tasmania. One of the impressive gardens was in Honolulu. It is the Lyon Arboretum run by the University of Hawaii. It is the only college sponsored arboretum in the U.S. that is in tropical rain forest terrain.

This arboretum provides a collecting place for the dwindling variety of plant and tree species in the Pacific area. The garden is set on the lee side of the mountain overlooking the city of Honolulu. Here it receives a significant amount of rainfall all year, consequently the landscape assumes a tropical forest kind of atmosphere.

One can find over 600 taxa of palms. Who would have thought there were that many? There are all sorts of ficus, taro, aroids, bromeliads, prayer plants, and even many types of orchids growing in the crotches of tree branches. A particularly interesting part of the garden is an assortment of plants that were very useful to the ancient Hawaiians for food and shelter.

Because everybody likes to eat, particularly gardeners, there is a spice and herb garden featuring exotic seasonings that are favorites of eaters all over the world, such as cloves, nutmeg, allspice, cinnamon, pepper, ginger, and many others.

Not only does the staff of the Lyon Gardens maintain their large population of plants, they have an on-going program of hybridization to breed plants that are more able to survive in the areas taken over by civilization, and where the original habitat has been significantly altered.

In several places on this trip I saw *Heliconia* growing and the flowers grandly displayed. I fell in love with this plant and fully intend to try to grow it in my own garden. The showy flowers themselves made the whole trip worthwhile. □

Robert Horwitz is a retired aerospace engineer who gardens in Point Loma.

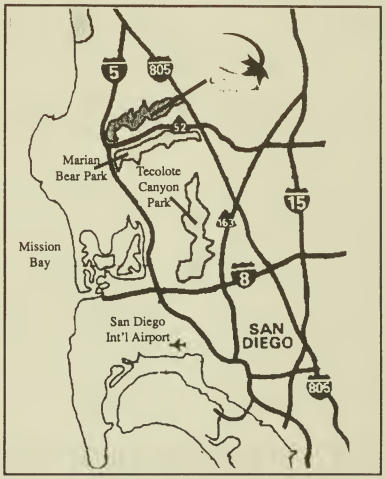
Drawing of *Heliconia* by Yuko Green for Dover Publications.

TECOLOTE CANYON NATURAL PARK

by BARBARA S. JONES

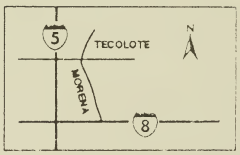
THIS DELIGHTFUL PARK SHOULD be on your must-see list. This urban canyon park was once the home of a Kumeyaay Indian village. This is a unique opportunity to see how the San Diego area originally looked.

The park is in the chaparral and coastal sage covered canyon that is east of I-5 and stretches from north of Linda Vista Road to a bit south of Claremont Mesa Boulevard. It has 6½ miles of nature trails. But the part you should visit is the Nature Center and botanic garden.



Tecolote Canyon Natural Park is now a city park with a ranger, but in the 1950s this canyon was scheduled to become a landfill. Concerned citizens and the Kumeyaay Indians objected so strongly that the plans were dropped. In 1974 the city council voted to acquire the land for use as a natural park and in 1978 Tecolote Canyon Natural Park was officially dedicated.

The museum and garden are relatively new and are located at the southern end of the park on Tecolote Road. The exhibits in the nature center are excellent. The geological formation of the area is described and illustrated, the native plants and animals are listed and illustrated, and the life and activities of the early settlers are explained. There is an interesting artifact collection. Of special interest to plant people is the uses by the Indians of the native plants. At the back of the building is a small fenced garden with specimen plants, each with a name stake, of the twenty-seven plants native to the area. Behind the garden, the hillside is covered with native vegetation. The whole exhibit is excellent and could be easily understood by children. Not only will the local residents be delighted to know more about the area, but visitors should find it equally interesting. Best of all, there is parking and everything (including about 1½ miles of trail) is accessible to people with disabilities.



Volunteers work at both the Nature Center and garden. Two groups are actively involved: The Tecolote Canyon Citizens Advisory Committee works with the city in implementing the master plan for the Park (contact M. Eloise Battle 278-1617); and Friends of Tecolote Canyon, a nonprofit group one can call to volunteer to help with projects or to provide tax deductible donations for purchasing plants, etc. (contact Sherlie Miller 292-5548).

The Nature Center is not always open, so phone the Park Ranger (581-9952) to inquire or for additional information. Special tours or lectures on plants and on the Kumeyaay Indians can be arranged.

NATIVE PLANTS OF TECOLOTE CANYON

Native plants are those that have evolved in a given location without the influence of humans. The native plants found in Tecolote Canyon are unique species restricted to Southern California and northern Baja California. In California 90% of our native coastal sage scrub and 95% of our riparian habitats have been overrun by human habitation. Most of Tecolote Canyon is an intermingling of two plant communities: coastal sage scrub and chaparral. The water that collects along Tecolote Creek and on other slopes of naturally created seasonal creeks supports a riparian habitat.

CHAPARRAL: In other parts of the country the area we call chaparral is called *elfin forest.* Chaparral is an almost impenetrable land cover of a wide variety of shrubs of almost the same height. The plants are mostly evergreen, branched, with small brittle leaves and extensive root systems (up to 80 feet) that helps them survive hot, dry summers. Chaparral is mostly on north facing and east facing

slopes. Chamise—greasewood (*Adenostoma fasciculatum*), toyon—California holly (*Heteromeles arbutifolia*), scrub oak (*Quercus dumosa)*, holly-leafed cherry (*Prunus ilicifolia*), and fuchsia-flowered gooseberry (*Ribes speciosum*) are the common plants of this habitat.

COSTAL SAGE SCRUB: This habitat is made up of smaller shrubs and is less dense. It is usually found on south or west facing slopes. Typical plants are: California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and bush monkey flower (*Diplacus puniceus*).

RIPARIAN: Slopes along naturally created seasonal creeks support the largest plants—trees. Sycamores (*Platanus racemosa*), coastal live oaks (*Quercus agrifolia)*, and arroyo willows (*Salix lasiolepis)* are found here.

No California landscape would be complete without cactus or cactus-like plants. The coastal prickly pear (*Opuntia littoralis*), jumping cholla (*Opuntia bigelovii*), barrel cactus (*Ferocactus viridescens*), and yucca (*Yucca schidigera*) are native to Tecolote Canyon.

Almost every one of these plants was used by the Kumeyaay Indians for food, medicine, or household use. Archeologists have uncovered evidence that the Kumeyaay people have inhabited the area for over 2,000 years. Incidentally, Tecolote means owl in Kumeyaay.

Information to write this article was obtained from M. Eloise Battle in March. Volunteers were preparing for a Kumeyaay Indian demonstration the next day. Volunteers, Eloise Battle and Arlene Kingery, were weaving a shelter out of willows cut from the San Diego River bed. The next day Kumeyaay Indian elders and members would be demonstrating basket making, telling stories, and singing and dancing. □

Barbara S. Jones is the San Diego Floral Association historian. Photos by the author.

FOUR GOOD ROSES

by CAROLINE STABILE

THE FOLLOWING FOUR ROSES are excellent choices for San Diego gardens and warrant seeking out. Their profiles are offered to pique your interest in a broader range of roses and to underscore the importance of considering roses as plants and not basing selection solely on blossom appeal. Roses are infinitely varied in characteristics, history, and performance. We can easily purchase roses to festoon the dining room table and the garden gate, but there are also less commonly considered roses that can provide screening, be a tenacious ground cover, serve as a small vine twining up your mailbox, be the star specimen in your xerophytic southwest garden, or grace a historic planting around a landmark old home. These "other" roses deserve to be part of our planting repertoire, too. They add variety and often simply outperform many of the more readily available modern hybrids.

'RED COAT'

(Austin, 1973)

This charming single shrub rose deserves to be more widely grown. The bush grows to a height of 5'-6' and almost as wide. It requires only light pruning to maintain its natural growth pattern. It also can be pruned as an informal hedge. 'Red Coat' is also an excellent candidate for mass plantings. To quote Austin himself, "I have often wished I could persuade municipal planters to use this rose, for I can think of few varieties more suitable for massed effect." The blossoms are crimson with yellow stamens with the red color dulling somewhat as the blossoms age. This rose is extremely free-flowering over a very long period and is a good cutting rose for long-stemmed informal bouquets. Petals fall cleanly away. The foliage is quite disease resistant. Hips are large and light orange in color. Deadhead and feed regularly to support its generous florescence.

Rosa laevigata 'Cherokee Rose'

An outstanding landscaping rose particularly suitable for large properties is the 'Cherokee Rose'. This extremely robust species rose can quickly exceed 30' and is best grown on a fence or as a vast mounding ground cover if space permits. As a screen, it is a wonderful alternative to the banksia roses providing a denser screen with its attractive evergreen, disease-resistant foliage. The leaves consist of just three leaflets. *Rosa laevigata* is once-blooming, early in the season, with scattered blossoms occurring through the fall. However, the spring bloom is truly spectacular with hundreds of 3½"-4" single white blossoms with golden stamens appearing along the canes on short pedicles. The sepals, pedicles, and large hips are all covered with soft bristles.

This rose spreads readily, sending up basal growth along its length and frequently rooting whenever the long branches touch ground making it an easy rose to propagate. This vigorous plant has naturalized in many warm regions of the world including the southeastern United States, but it is indigenous to China and Taiwan. Ironically, the immigrant 'Cherokee Rose' was adopted as the state flower of Georgia. The common name is derived from the Cherokee Indians, native inhabitants of the southern Appalachian Mountains who developed a complex lore surrounding it.

Rosa laevigata 'Cherokee Rose', after blooming, showing its qualities as a screen and fence.

Its arrival in North America remains a botanical mystery. It may have come with early Spanish explorers as plant or seed, but others speculate that early rice shipments were contaminated with its seed. *Rosa laevigata* was introduced into horticulture in 1759.

Rosa roxburghii 'Chestnut Rose'

Another excellent and unique landscaping rose is *Rosa roxburghii*. Like the 'Cherokee Rose' it also has bristly buds and hips. The hips are reminiscent of chestnut burs, hence its common name. Flowers are a luminous deep pink shading to lighter pink petals at the edges. The petals themselves often have a concentration of color along the edge. Flower form is very full double with many short and rather narrow center petals, not unlike an informal dahlia. (There is a single blossom form also available.)

As a cut flower, each blossom unfortunately does not last long, but the unusual branches with their bristly buds and glowing pink flowers on short stems make for unusual, asymmetrical floral arrangements. The very disease-resistant foliage is fern-like with each leaf being comprised of 9-19 small leaflets (13 being typical). Pairs of thorns occur just below the leaf junctures. Stems are covered with an unusual light tan papery bark that flakes and peels. It eventually becomes a large plant with stiff, angular, impenetrable branches, making it an excellent selection for perimeter fencing.

Rosa laevigata 'Cherokee Rose'

A solitary plant also makes a fascinating accent specimen. It does not require severe pruning; prune only to shape. *Rosa roxburghii* is almost certainly of Chinese origin. The single form is native to China and Japan. The double form was introduced into horticulture in 1824 by William Roxburgh, Superintendent of the Botanic Garden of Calcutta, who reported that the rose came to India from Canton.

'Madame Hardy'

This elegant white, once-blooming damask is truly a classic old rose. It was bred in 1932 by Monsieur Hardy, custodian of Empress Josephine's celebrated rose gardens at Malmaison in France, which contained all the world's known roses. Classified as a damask rose, it is probably of mixed parentage, but the exact cross has been lost. Reaching 5′-6′, the bush is somewhat lax in form, but it can be beautifully presented by growing it against a simple T-support constructed of 2″ x 2″ redwood.

Often touted as one of the most beautiful of all white roses, the spring blooms of 'Madame Hardy' are slightly cupped with a distinctive green eye and a clean citrus fragrance. Buds are often tinged with pink and encircled by very leafy sepals. Leaves are composed of seven leaflets, dark green in color, and of a mat, quilted texture. The foliage is quite disease resistant with only a minor susceptibility to mildew.

There is an outstanding quotation from Fielding's *Tom Jones* that should be the creed of all home gardeners, "Handsome is that handsome does." By all means shop the bare-root bounty, stop to smell and consider your local nurseries' newly potted up hybrid teas and floribundas. But come forearmed against impulse shopping with a wish list based on what you want and need in your garden and good information about the vigor and growth habits of the different varieties. Today the amount of "how to grow roses" information to help you select and grow roses is nothing less than encyclopedic.

The following general tips should begin to demystify the growing of roses. Take heart; wild roses evolved throughout the northern hemisphere millions of years before man started spraying. If you have taken the time to make a wise choice, the rest is easy and should be a joy.

First, be generous with the space you allot for your roses. The mild San Diego climate and long growing season encourages roses to grow larger than they might elsewhere. If you live along the coast this is doubly true because overcrowding and moist conditions invite the spread of fungi. Follow the old adage of not planting a $10 rose in a $2 hole!

Dig an ample hole and amend the fill dirt with compost or a planting mix—especially if your soil is poor. Roses grow happily in the clay soils so prevalent in the county, but you must avoid

overwatering.

As you cut flowers for the table, view it as an opportunity to maintain the plant's shape. Try to avoid removing too much foliage as you cut flowers early in the growing season, however.

Remember to fertilize with a bloom formula throughout the flowering season. In the milder areas of San Diego, roses may be blooming in December. They need to be forced to retire for the winter by pruning back the branches and defoliating the plant. Remove all spindly growth and dead wood. Clean away debris, which may be harboring disease spores.

If you have underestimated the size of a rose, it is a good time to move the plant before spring growth begins. Even very large roses can be transplanted, if necessary, but it may take several years for them to recover fully.□

Caroline Stabile has lived and grown roses in Rancho Santa Fe for twelve years. A plant devotee since early childhood, her most intense association with plants began in 1985 with a nine-year involvement with Quail Botanical Gardens as a volunteer, two-term president of the foundation and acting director of the gardens.
Photos by Bruce Stabile.

'Madame Hardy'

SOME NEW ROSES

by RITA E. APPLEGATE

MY HUSBAND AND I have been rose lovers and growers for many years. We have grown the old standbys: Mr. Lincoln, Double Delight, etc.; however, being rose judges and exhibitors, we try to grow as many new varieties as possible. There are many varieties introduced every year. It would be impossible to grow them all, but I will give you my impressions of some new ones that we have tried.

APRICOT:

'Sunset Celebration' (Hybrid Tea) This is a new AARS rose for 1998. It is named for the 100th Anniversary of Sunset Magazine. It is a very vigorous grower with a spreading habit. The foliage is medium green, and it produces one-to-a-stem, beautiful blooms.

ORANGE:

'Jane Pauley' (Hybrid Tea) Bright orange-gold color. Grows about 3′ to 4′ tall with upright growth. It has dark-green glossy foliage. We have found it grows best in our garden in partial shade.

'Livin' Easy' (Floribunda) Soft orange-gold color with medium-green glossy foliage about 4½′ tall and spreading (give it lots of room). It seems to be always in bloom and will brighten any corner of the garden.

'Playboy' (Floribunda) This is not a new rose but bears mentioning as it is one of the few roses that tolerates shade. If it only has five hours of sun it seems to thrive. It grows about 5′ tall and produces beautiful orange-red sprays of blooms.

PINK:

'New Zealand' (Hybrid Tea) Produces many pink-apricot colored blooms with dark-green glossy foliage. In our garden it grows about 5′ tall and upright. It also has a **fragrance**.

'Secret' (Hybrid Tea) This has creamed-colored-with-pink blooms. Has a rapid repeat bloom and is **fragrant**. It grows about 5′ tall with glossy green foliage.

'Sexy Rexy' (Floribunda) This is an awful name for a great rose. It is medium pink with shiny medium-green foliage. Produces gigantic clusters of blooms that last a long time. It grows about 5′ tall and upright.

(continued on page 118)

Now Is the Time . . .

A CULTURAL CALENDAR OF CARE FROM OUR AFFILIATES, UC COOPERATIVE EXTENSION, AND *CALIFORNIA GARDEN* STAFF

AFRICAN VIOLETS
by Helen LaGamma

NOW IS THE TIME

TO CHECK that plants are not crowded.
TO KEEP violets well groomed.
TO PLACE pans of wet pebbles among plants to increase humidity.
TO USE a fan to circulate the air to prevent mildew.
TO USE cool light tubes if violets are under lights. If using natural lighting, place plants farther away from source.

BEGONIAS
by Margaret Lee

NOW IS THE TIME

TO REPOT plants if needed — step up to next size container.
TO MAKE cuttings when trimming or pruning.
TO GROOM and inspect plants throughout growing season.
TO CHECK for mildew — spray at once for control.
TO CHECK for snails, slugs, and fungus.
TO POT rooted cuttings and leaves.
TO CONTINUE feeding.
TO REMOVE old flowers from tuberous type by snapping off the blossoms not the stems.
TO FEED tuberous plants when flower buds appear. Feed one tablespoon High-Bloom and one tablespoon of fish emulsion to one gallon of water.

BONSAI
by San Diego Bonsai Club

NOW IS THE TIME

TO WATER, water, water — but not overwater. During the hot months it is best to water early in the day. Some bonsai may need two or three waterings on hot, dry days.
TO TURN some trees for even to sun exposure.
TO PROTECT some plants by moving into a shaded area out of direct sun.
TO CHECK for insects and pests — spray with a diluted spray. (Be careful with elm trees, which usually do not need spraying.)
TO MIST or spray foliage of certain bonsai, those which are humidity-loving, in the evening or early morning.
TO WAIT until September or October to transplant bonsai.
TO REMOVE excess blossoms from trees to save their strength for next year. Defoliate some of the deciduous varieties in July — not later.

BROMELIADS
by Mary Siemers

NOW IS THE TIME

TO PROTECT plants from burning during the hot weather by placing them under lath, shadecloth, clear fiberglass, or trees.
TO INCREASE the frequency of water according to the temperature, but do not allow the soil to become soggy.
TO CONTINUE to fertilize once a month during summer — using water soluble, high acid fertilizer. Use one-half of strength recommended on label.
TO REMEMBER to water plants one day before fertilizing.
TO CUT off shoots (pups) to make new plants while weather is warm. Remove when they are ⅓ or ½ the size of the mother plant.
TO KEEP plants clean by cutting off spent blooms and dead leaves.

CACTI & SUCCULENTS
by Joseph Betzler

NOW IS THE TIME

TO WATCH plants during hot weather. If they dry out too much they can shrivel and burn in the sun. Protect delicate specimens from the sun with screen.
TO WATER plants carefully. Some like to dry between waterings, others can take it wetter. Use less on the plants that are dormant.
TO FERTILIZE growing plants but do not overfeed. A good rule of thumb is ½ strength every other watering.
TO WATCH plants for pests — especially snails. Treat immediately but be careful with insecticides.
TO CHECK for plants that need repotting and do so.

TO ENJOY your collection — take a little time to look at your plants.

CAMELLIAS
by E. C. Snooks

NOW IS THE TIME

TO KEEP watering on a regular basis. Roots must be kept damp, but not wet.

TO MULCH with redwood compost or pine straw or any other available material. Keep the roots cool.

TO APPLY iron for good foliage and bloom color.

TO APPLY second of three fertilizations with cottonseed meal or other acidic fertilizer. Never fertilize a dry plant and do water well after applying fertilizer.

TO CHECK for insects and mites — the latter are especially prone to attack during hot, dry periods. Apply Cygon or miticide as needed.

TO PRUNE unwanted new growth before it hardens. The center of the plant must be kept open for air circulation.

TO START disbudding as soon as blooms can be recognized. These buds are round while growth buds are pointed.

DAHLIAS
by Abe Janzen

NOW IS THE TIME

TO KEEP old blossoms cut back to first of leaves from the main stalk to prolong blooming.

TO DISBUD to encourage better blooms.

TO TIE canes to prevent plants breaking — use a loop for each cane.

TO CONTINUE regular watering program.

TO SPRAY for insects and mildew; control slugs and snails.

TO FEED with a 5-10-10 fertilizer.

TO CUT blossoms in late afternoon or early morning and place immediately in water.

EPIPHYLLUMS
by San Diego Epiphyllum Society

NOW IS THE TIME

TO WATCH moisture — spray or mist is beneficial during hot dry weather. Spray during evening hours or early morning.

TO REPOT plants that are rootbound.

TO TAKE new cuttings.

TO KEEP plants out of full summer sun; they need filtered sunlight and free air movement.

TO REMOVE spent blooms and unwanted "apples" to conserve the plant's vitality.

TO PLANT new cuttings during the warm weather allowing new growth to become established during the growing season.

TO WATER hybrids during the hot summer months, spray occasionally or mist. Do not allow soil to dry out completely.

TO CONTINUE pest and disease prevention using products according to the manufacturers' directions.

TO FERTILIZE for new growth. Use 10-10-15 strength at this time.

FERNS
by San Diego Fern Society

NOW IS THE TIME

TO SPRAY for aphids and scale; keep snails, pill bugs, and slugs under control.

TO FERTILIZE plants regularly with a high nitrogen fertilizer. They are in their growing period.

TO WATER and maintain humidity by keeping the surrounding areas damp.

TO TRIM dead fronds.

TO PLANT fern spores.

TO PROTECT from the hot sun.

FRUIT TREES AND VINES
Vincent Lazaneo, Hort. Advisor, UC Coop Extension

NOW IS THE TIME

TO MONITOR soil moisture within the root zone and irrigate when soil begins to dry. Periodically apply enough water to leach salts below plant roots (3-4 feet deep).

TO SUPPORT limbs that have a heavy fruit load to prevent breakage.

TO BEGIN harvesting fruit as soon as it is ripe.

TO REMOVE fruit that is damaged or on the ground to discourage green fruit beetles and other insect scavengers.

TO PRUNE out shoots killed by fire blight on pear, apple, quince, and loquat. Make cuts at least 12 inches below (if possible) infected tissue and disinfect pruning shears between cuts.

TO KEEP ants off trees and periodically wash foliage with a forceful spray of water to promote biological control of spider mites, aphids, whiteflies, scale, and other insects.

TO INSPECT new leaves for signs of zinc and iron deficiency (yellowing between veins). Apply micronutrient spray if needed.

TO PRUNE out blackberry and raspberry canes that have borne fruit.

FUCHSIAS
by San Diego Fuchsia & Shade Plant Society

NOW IS THE TIME

TO SPRAY to control insects. Orthene will control most pests: aphids, leafhoppers, caterpillars, leaf miners, thrips, and whitefly. Use manufacturers' instructions.

TO SNIP off runners for shape and new growth.

TO PRUNE lightly to encourage more fall blooms.

TO KEEP foliage misted. Spray only in the shade or early evening.

TO AVOID overwatering; keep damp, not wet.

TO FERTILIZE regularly with high phosphorus for buds and bloom.

TO REMOVE spent blooms and seed pods to encourage more and larger blooms.

GERANIUMS (PELARGONIUMS)
by Carol Roller

NOW IS THE TIME

TO WATER thoroughly when plants become relatively dry. Do this before the heat of the day. Each watering should moisten the entire soil ball. Excess water should drain away. Keep foliage as dry as possible.

TO CONTINUE feeding a soluble, balanced fertilizer with micronutrients. Use at less than the recommended strength as often as needed to keep plants from developing nutritional deficiencies. Water and feed before the heat of the day. Do not feed if plants have become too dry.

TO CONTINUE pest and disease prevention, using products according to the manufacturers' directions.

TO GROOM plants, removing discolored leaves and faded flowers. The old bloom stalks on regals, scenteds, and similar types should be cut away with a sharp blade.

TO TAKE cuttings from zonals and ivies, if desired. Each cutting should have a healthy growing tip. Trim and insert into a moistened, sterile medium.

TO PROTECT cuttings and tender plants from the sun if temperatures are high. Move to a sheltered spot or create overhead shade. Keep summer dormant plants dry and away from excessive heat.

TO CONTINUE to rotate pots on a regular basis in order to keep plants well shaped.

HERBS
by John Noble

NOW IS THE TIME

TO WATER wisely. The mints, foxglove, and sweet woodruff like lots of water. Lavender, rosemary, and thyme prefer only a little.

TO COOL off by spraying down your herb garden with the old reliable hose. It will clean the leaves of dust and pests.

TO DRY some of your flowering herbs such as yarrow, red clover, and passion flower.

TO HARVEST seed from dill and cilantro plants.

TO PREPARE fresh salads with basil, French sorrel, parsley, tomato, olive oil, and a pinch of salt.

TO ENJOY summer's long evenings by inhaling the wonderful fragrances of lavender, rosemary, thyme, artemisia, and sage.

IRIS
by Iris Society

NOW IS THE TIME

TO SPADE and work humus into the soil to revitalize before planting rhizomes.

TO FEED plants left in the ground with a high nitrogen fertilizer — this one time only.

TO DIVIDE and replant tall bearded iris, taking only the new rhizomes attached to the outer edges of the mother clump. Dust ends of cut rhizomes with soil sulfur.

TO KEEP iris beds clean and free of old fans and weeds.

TO WATCH for aphids; use a light insecticide or a systemic.

TO CUT off spuria iris foliage, but do not dig until September.

NATIVE PLANTS
by Jeanine De Hart

NOW IS THE TIME

TO ALLOW your native garden to take a summer rest. Allow the soil to almost dry before watering. The roots on the drought-tolerant natives are not taking up much water at this time and it is very easy to induce root rot.

TO BE very vigilant about the weeds as they rob the soil of nutrients that the plants need. Mulching is very helpful for cutting down on weeds and retaining moisture in the heat of the summer.

TO HAVE your list ready for the plants you wish to buy and plant in the fall. If you know which ones you want, your local California Native Plant Society can have them available in the fall, usually!

TO BE careful about getting water on the leaves of touchy plants during the heat of the day. Susceptible plants would include; *Fremontodendron, Arctostaphylos, Dendromecon* and *Trichostema.*

ORCHIDS
by Charles Fouquette

NOW IS THE TIME

TO KEEP an eye out for infestations of scale and spider mite.

TO USE the proper pesticide and keep in mind that at this time of year with low humidity and warm weather, there are continuous hatches of insects.

TO CHECK all potting mixes for good drainage. We do not want rotting potting mixes.

TO MIST and spray on hot, dry days.

TO CHECK new seedlings and community pots. Do not let them dry out or get sunburned. Dry air caused by winds from the interior will desiccate small plants.

TO PLANT any keikis (offshoots) from *Dendrobium, Phalaenopsis, Vanda, Ascocenda,* etc., when roots are about two inches long.

TO CHECK the root tips of growing *Phalaenopsis* and other vandaceous plants (air roots). If the tip is green and elongated, the water and humidity are about right. If the tips are white, that indicates more water is needed or more humidity is required. This often applies to other genera also.

TO HAVE most monopodial [a growth habit in which new leaves develop from the same meristem or growing point] orchids dry by nightfall, so water will not sit in the leaf axil.

ROSES
by Marianne Truby

NOW IS THE TIME

TO WATER at least twice a week, filling each basin with water twice each watering to make sure the water is penetrating into the root zone at least one foot below the surface.

TO WASH off foliage in early morning with strong spray of water to control mites and keep leaves clean.

TO MAINTAIN beds with organic mulch to keep soil cool and friable. Some mulching materials deplete the nitrogen supply in the soil and you may wish to compensate by adding some form of nitrogen at this time.

TO OBSERVE the new growth on your plants, taking care to shelter the new basal growth, and keeping unwanted immature cross branches removed.

TO PRUNE lightly in early August to encourage new growth that will produce blooms into late November. Remove growth of stems that are smaller than pencil size to a five leaflet leaf. Clean up all beds.

TO APPLY gypsum (calcium sulfate), an inorganic soil amendment. It does not change the pH, but added to alkaline soil it reacts with the insoluble sodium compounds to form sodium sulfate, which is soluble and can be leached out by HEAVY penetration. You MUST WATER, WATER. Sprinkle gypsum over entire bed and lightly rake in before flooding.

TO FOLLOW UP with a cup of alfalfa meal or pellets, a great root growth stimulant (available at most feed stores). Continue with your regular feeding program. Roses are heavy feeders and enjoy a change of diet.

TO REEVALUATE your bushes continually for possible replacement or removal. If you have plants that are nonproducing, it is an excellent time to plan for their replacement. When you remove the plant, check it over to note the possibility of root gall, a white porous growth frequently appearing near the bud union, which has been caused by a careless shovel or cultivator. It is a good time to dig a large hole, replace the growing medium, and be ready for a replacement.

TO SELECT replacements, it is wise to study the varieties you are considering at various times of the season and in locations having the same growing conditions as yours. Beauty is indeed in the eye of the beholder and seeing is believing.

VEGETABLES
Vincent Lazaneo, Hort. Advisor, UC Coop Extension

NOW IS THE TIME

TO MAKE last planting of warm-season vegetables (tomatoes, peppers, eggplant, corn, beans, summer squash) in July for fall harvest.

TO PLANT seed of cole crops (cabbage, broccoli, cauliflower) in August for winter harvest.

TO COVER seed with floating row cover to protect young plants from insect pests.

TO WITHHOLD water from rhubarb and artichoke and allow plants to go dormant until fall.

TO CONTROL corn earworm, apply Carbaryl (Sevin) or *Bt* when silk first emerges, then every three days until silk turns brown.

VEGETABLES, ANNUALS
from UC Cooperative Extension Publications

NOW IS ONE OF THE BETTER TIMES IN FROST-FREE AREAS

TO PUT IN SEEDS OF: beans (snap and pole, lima in July), broccoli, cabbage, cauliflower, corn (July), cucumbers (July), lettuce (head), peas, potatoes (August), summer squash — sweet alyssum, centaureas, dianthus, mignonette, annual phlox, portulaca, and Virginia stock (*Malcomia).*

PLUMERIA (FRANGIPANI)

by HENRY M. DUPREE

THE PLUMERIA IS AN unusually misunderstood plant. It is thought by most to be hard to grow and that it is native to Hawaii. True, it is used extensively in Hawaii for flower leis due to the different colors and exotic fragrances of various trees. The plumeria is indigenous to the North and South American continents and the Caribbean Islands. The tree was first introduced into Hawaii in 1860.

The Spaniards found it and transported it to Europe and it was introduced to India, Singapore, Africa, and other locales. It is known in India as the graveyard flower due to plantings at grave sides, with fluttering petals showering the dead.

Blooms are many colored with different fragrances; the common yellow is most fragrant, most used, in leis. There are several rainbows, different shades of pink, peach, orange, red, and gold. Seed pods have twenty to a hundred seeds, each producing plants that produce flowers with little or no resemblance to the parent. They take two to three years to bloom, with perhaps an unusually beautiful bloom in color, size, or fragrance.

Growers take the unusual plant under special care for eight or more years, propagating it from cuttings until they have sufficient for making sales; these are known as cultivars and are very expensive, costing fifty or more dollars per cutting. After a few years, the price drops as the trees multiply, causing the supply to overcome the demand. Nearly all trees produce great blooms with these cuttings sold retail at about five dollars.

Now is the season of bloom from June to the middle of November. Trees in bloom may be seen in the fenced yard north of the Photo Arts Building in Balboa Park, San Diego. There are three large trees and eight different-sized bushes. A visit to a nursery will give you an array of the plants, colors, sizes, and prices.

Believe it or not, plumerias are grown all over North America, in freezing climate areas and in cellars under artificial lighting. I have several trees and many plants in one- to five-gallon pots. I have one tree, potted for six years, now in a twenty-two gallon pot, that produced thirty huge blooms last year and will produce forty or more this year. □

Henry M. Dupree states that he is eighty-eight years old and still going strong. He was in the Navy for thirty years, growing plants the whole time. He says that he had raised plumerias for twenty years, but he didn't know what he was doing until two years ago when he received advice from a friend.

Plumeria trees in Balboa Park leafing out in May after pruning.

SOLVING PLUMERIA PROBLEMS

by JERRY RAY

A NEIGHBOR STOPPED BY to tell me his plumeria tree didn't look right and asked if I would take a look at it. His tree is in a container that stands on a concrete patio deck surrounded on three sides by the white stucco walls of his home.

He explained that the tree had bloomed profusely all summer producing its last flowers in January. This tree is a start from one of my sturdiest trees, which experiences phenomenal health. As he showed me the problems, I commented that our San Diego weather has been so hot and cold this year that the new growth of leaves isn't sure whether it's coming or going.

The four-foot tree had good size branches. It did not exhibit peculiarities that reflect our short growing season and inconsistent weather. (Some trees show burst of growth, dormancy, fat places in the limbs, lean and scraggly lengths. All healthy growth, just the result of our weather pattern—or lack of it.)

One branch tip showed what had been new leaf growth but had become crusty. I gently rubbed away the dried material to expose continuing new growth beneath. There was some kind of "substance" on the branch tip that will bear watching. Possibly the tip was bumped and bled and this is merely coagulation. There seemed to be no sign of pests.

Another branch was sturdy looking (next page)

but with parched skin on one side and a deadish-looking tip. This was probably due to one of those very hot spells this spring. The tree is sheltered from wind and chill, but is in somewhat of a hot box. I felt the tip of the branch. It did not feel fresh. (Remember, plumeria growing is better done if a hands-on approach is used and parenting skills brought into play. Daily living will send signals of something just not being right.) Gently I pushed my fingernail into the skin and flesh of the branch near the tip. Nothing. No rot, no white milk, nothing. I moved my finger down a few inches until the branch looked healthier. I inserted my nail slightly. White milk. Hooray! At that point, I dug a bit into the flesh near the tip. It was dry, pithy and brownish. I suggested that the branch be cut back until milky, white meat is found. The brown should be discarded.

My neighbor seemed slightly reluctant when asking, "Cut it back?" I was sympathetic with his feeling. When I first started growing plumerias I never wanted to cut them back. With a good thing going, why take chances?

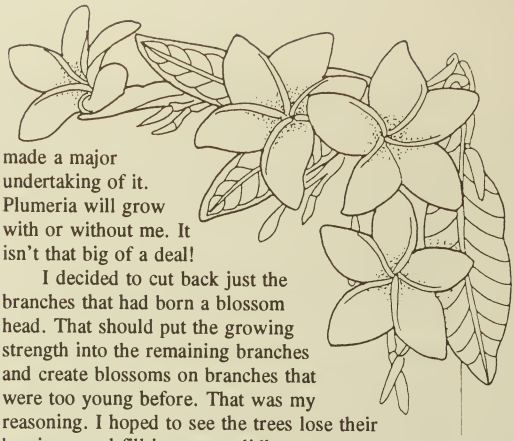
I assured him, "Yes, cut it back. New growth will appear from the areas where leaves were." I showed him the scars on the stalk where leaves had been. That is where the new growth will appear. Maybe one new shoot, maybe many. Maybe soon. Maybe Hawaiian time. Just keep an eye out for the bumps to form like swollen gums before new teeth break forth.

A few years ago I set about to do the first major pruning on my three largest trees. Started from seed, they were about twenty years old. I had become fascinated in the size they were attaining. Cutting back never occurred to me until I realized that to enjoy the blossoms I had to view down from the upstairs window, and a six-foot step ladder was needed to reach even the lowest bloom.

Bringing down height was the main objective. Please note, I am self-taught. I learned from my early and errant thinking.

I made cuttings of three to five feet keeping an eye more to what new trees would look like than how my mature tree would look at the job's completion. In the end, the trees were quite leggy and rangy—but shorter.

Last year I decided corrective action was needed. I walked around the yard looking at the ten older trees. Yes, I was guilty of abusing these lovely trees. I was in awe of the height forgetting what would be to their best interest for blooming and visual presentation. I studied the situation for several weeks. From the dining room window I looked and studied. From under the trees I peered up through the branches. I really



made a major undertaking of it. Plumeria will grow with or without me. It isn't that big of a deal!

I decided to cut back just the branches that had born a blossom head. That should put the growing strength into the remaining branches and create blossoms on branches that were too young before. That was my reasoning. I hoped to see the trees lose their legginess and fill in more solidly.

In cutting a branch, I leave several inches from the joint to promote new growth on the stub. The cut on the tree is sprayed with pruning sealer, but the cut end of the branch removed is left to air dry (heal). If limited space or shape are concerns, cut at the joint and hope the tree understands your goal. Do watch that cut opening on the tree.

Each day I walk my yard, picking and grooming. It only takes a few minutes, keeps the yard looking good, and prevents a major task somewhere down the line. Walk with me now among these sneaky beauties. They can look the picture of health and be dying before our eyes. Feel the base of the plant where it enters the soil. Is it firm or squishy? If it's the latter, how high up the trunk does that feeling go? Feel the tips of each branch. Oh, they look healthy and the winter wasn't harsh? Feel the branch tip. Is it firm? Is it mush? Treat the damage as I recommended to my neighbor. Save any good white cuttings and let nature take its course. Check any shriveling. Are any cut areas suffering decay within the branch end?

While visiting a friend in Point Loma, I inquired about the two potted starts at our feet. They just didn't look right. A mother knows. My friend said they were coming along. With her permission I bent to touch the stalks. The ends bent and squished. Rot. But the very tips looked like new leaf growth. This is something that gets by us so easily. We are all so busy we think things are perking. We tend to forget how much time passes and those leaves should be unfolding and growing.

If a leaf does grow in size but doesn't open, gently pry the edges apart. It may be all right, but there may be a creature inside that has taken up light housekeeping—a worm, spider or a cocoon. Exorcise that life form!

My trees appear to be putting on bud heads early

this year. They normally bloom from August through February. Could be selective pruning. Possibly the TV-hyped fertilizer, although I have not been faithful in application. Maybe it is those days into the eighties some weeks back. I really can't determine the reason. Plumeria will grow with or without me. It will do the same for you.

Note: Major problems for plumeria trees are over watering, lack of sun, and improper fertilizer (the first number in the three number formula should be zero). □

Jerry Ray became interested in plumeria while she lived in Hawaii. She has been collecting and successfully growing plumeria in her Golden Hills home for over twenty years.

(continued from page 111, "Some New Roses")

RED:

'Scentimental' (Floribunda) was the AARS winner for 1997. It is a burgundy-red with creamy-white stripes. It is very **fragrant** and has a great repeat bloom. It has been disease free in our garden. This would look great in a mass planting.

'Rockin' Robin' (Shrub) Pink, red, and white blooms. This is an upright grower with blooms growing along the canes. This would be great for a small corner in the garden that needs color. Clean, glossy foliage.

'Kardinal' (Hybrid Tea) Orange-red with medium-green glossy foliage. A favorite of the rose exhibitors. It has the classical hybrid tea form. This is also a great garden rose that grows one-to-a-stem blooms as well as clusters of blooms.

'Raven' (Shrub) Deep red. It is medium-tall, upright, and bushy. The blooms are dark red and grow in large clusters. This will be available in 1998. This is another variety that can be used in those small spaces for color.

WHITE:

'Sally Holmes' (Climber) It is classified as white but it has a slight apricot color when it opens. Grows very large clusters of blooms and as the first blooms fade the center blooms open so it seems always in bloom. In the spring, the bloom is so heavy you cannot see the foliage. This is planted in the front of our home and many people stop to admire it when it is in bloom. Give it lots of room.

'Lady of the Dawn' (Floribunda) This grows like a small climber with delicate-white-touched-with-apricot blooms in clusters with bright-yellow stamens. We have tied this to a trellis and it would be lovely growing over an arbor.

YELLOW:

'Flutterbye' (Shrub) It grows like a climber so give it lots of room. It is yellow, coral, tangerine, and pink. The flowers change colors daily starting with a bright yellow. It produces large clusters of blooms and the foliage is shiny green and is disease resistant.

'St. Patrick' (Hybrid Tea) This is yellow gold tinged with green. This was the 1996 AARS winner. It loves the heat and develops its prettiest blooms when the weather is hot. Has grey-green foliage and grows about 5′ tall and is upright.

MAUVE:

'Fragrant Plum' (Grandiflora) Has a smokey-blue color and as the name indicates is very **fragrant**. It grows long-stemmed blooms on a tall, upright plant with deep-green foliage.

'Blueberry Hill' (Floribunda) Clear lilac color with bright-yellow stamens and has a **fragrance** that reminds you of apples. It has clean, glossy foliage with clusters of lilac blooms.

'Stainless Steel' (Hybrid Tea) A mauve-grey colored bloom growing on a very tall bush that produces long-stemmed, beautiful blooms that have the classic hybrid tea form. As the hybridizer says, it is an "everyday" version of 'Sterling Silver' but is much easier to care for. Lovely **fragrance**. Has glossy green leaves.

The best places to observe the latest roses are at a local rose show or at Balboa Park's Rose Garden. This garden usually gets the new roses a year before they are introduced to the public.

Anyone who is interested in growing roses should avail themselves of one of the three local rose societies. San Diego Rose Society meets the third Monday evening of the month at the Casa del Prado in Balboa Park. The East County Rose Society meets the first Sunday afternoon, 2pm to 4pm, at members' gardens. The California Coastal Rose Society meets the third Tuesday evening at Heritage Hall, Carlsbad. Each rose society has a list of American Rose Society Consulting Rosarians who will be glad to assist you with your rose questions at no charge. □

Rita E. Applegate is a past president of the San Diego Rose and East County Rose Societies. She is an American Rose Society Consulting Rosarian, Horticulture Rose Judge, and Co-Chairman of Judges for the Pacific Southwest District.

[Editor's note: Time constraints prevented having photographs of these new roses. Many of the labels on the plants in Balboa Park gardens are stolen, but in May, I found labeled plants of 'Scentimental', 'Secret', and 'Sunset Celebration'.]

SULPHURS AND SUNSHINE©

by PAT PAWLOWSKI

MELLOW YELLOW—IT'S THE perfect color to brighten up your garden on a cloudy, overcast day. Of course, here in Southern California, the sun shines a good deal of the time anyway (except when you are having that special garden party, of course).

However, if you operate on the principle that you can't have too much of a good thing, you might want to make your garden appear even sunnier than it already is. To do this, consider adding a sprinkle of yellow butterflies. One of the most common yellow butterflies in our area is the cloudless sulphur (*Phoebus sennae marcellina*).

If we wish to attract cloudless sulphurs to the yard, first we have to understand how butterflies and plants fit together. To do this, we have to discuss the butterfly life cycle.

Phoebus sennae marcellina, cloudless sulphur

If you already understand the butterfly life cycle, you have the following options: You can either skip the next few paragraphs and get a glass of juice (or wine); you can read on in the hope that you will learn something new and then get the juice or wine later; or skip the whole thing and go directly to the wine (or juice).

For those who have decided to stick around (all three of you), we must ask the following question: What comes first—the butterfly or the egg?

In this case, let's start with the butterfly (a mated female cloudless sulphur). She will search until she finds a host plant on which she can lay an egg. The host plant for cloudless sulphurs is senna (*Cassia* species). This plant genus is the only one whose leaves have the correct chemical make-up that, in turn, will supply proper nourishment when the egg hatches into a tiny caterpillar. To make sure the plant is from the senna family and will provide proper nutrition to the imminent youngster, the female cloudless sulphur will first taste the plant with her feet. (She will not be wearing shoes.)

If the plant "tastes" right, she will lay the egg. The egg will hatch, and out will pop a caterpillar, or larva. The caterpillar or larva—yellow, green, and black and cute as all get-out—will eat the leaves of the senna. It will grow, and eventually get large enough to form a chrysalis, or pupa. It will pupate for a week or so, and then a 2-inch, lemon-yellow butterfly will emerge.

After its wings dry and stiffen, the new cloudless sulphur will begin its search for nectar and a one-night stand.

Therefore, in order to attract as many butterflies as possible, the sophisticated butterfly gardener will provide both larval-food plants (for the caterpillar to munch on) and plants that contain nectar (for the adult butterfly to slurp).

LARVAL-FOOD PLANTS

Senna (*Cassia* species) - Evergreen or partly deciduous shrubs and trees. Many kinds; all have flowers in some shade of yellow. Senna takes full sun, and deep but infrequent watering. Some kinds like hardy cassia (*C. nemophila [C. eremophila]*), silver cassia (*C. phyllodenia*), and Sturt cassia (*C. sturtii*) are especially good for dry climates.

Senna varieties that require a bit more water are:

Crown of gold tree (*C. excelsa*) - Partially evergreen tree; large bright yellow flowers.

Gold medallion tree (*C. leptophylla*) - Good-looking; fast-growing, deep yellow flowers.

Golden wonder senna (*C. splendida*) - Evergreen shrub; usually 10-12 feet; rich yellow flowers in clusters.

Woolly senna (*C. tomentosa*) - Evergreen shrub; vigorous grower; 12-15 feet; deep yellow flowers.

If you're interested in going native, our two native senna species include *Cassia armata* and *Cassia covesii*.

According to Philip A. Munz in A Floral of

Southern California, 1975, senna (*Cassia tomentosa*) . . . occasionally escapes cultivation, establishing itself in dumps.

If the dump in your area does not carry senna, don't despair; there are many fine nurseries that probably do. To find out who carries the plant with those gorgeous yellow flowers that attract that gorgeous yellow butterfly, check the gorgeous yellow pages.

NECTAR PLANTS

Adult butterflies do not eat plant leaves; they only partake of nectar. You, the bountiful butterfly gardener, will be happy to provide nectar in the form of beautiful flowering plants such as lantana, hibiscus, cardinal flower, bougainvillea, morning glory, daisy, cordia, thistle, and geranium. Red geranium, for some reason, is especially favored by sulphurs.

SCINTILLATING SULPHUR STRATAGEMS

Not one to hang around waiting to get eaten by predators such as birds, lizards, flies, wasps, hornets, and spiders, the cloudless sulphur caterpillar constructs a nest from silk and the leaves of the host plant, and hides in it during the day. In the pupal stage, the cloudless sulphur also is a master of disguise: The chrysalis will readily pass for a partly unfolded young leaf.

OTHER THINGS SULPHURS APPRECIATE

You, the sensitive butterfly gardener, will try to supply the following garden conditions: Sunny areas that are somehow sheltered from the wind; puddles in which sulphurs can plop their proboscis to siphon up needed nutrients; and a basically pesticide-free environment, since, besides so-called "bad bugs," pesticides kill butterflies and other beneficial insects.

Because populations of the cloudless sulphur vary from year to year, it is hard to say that its numbers are diminishing. However, there is a disturbing decrease in the amount of individuals in almost all butterfly species. You can help to keep cloudless sulphurs from some day flying into extinction by planting a senna or two in the yard.

Although the cloudless sulphur is a migrant and thus will not be frequenting your garden every day of the year, you can still enjoy those happy yellow flowers if you plant a senna.

So go ahead. Plant a little sunshine in your garden.

After all, there is nothing like a dab of yellow to keep away the blues. □

Text copyright by Pat Pawlowski, who is a writer and the wildlife garden designer for Animated Gardens.

("Volunteers Take Care of a Little Bit of Baja" continued from page 105)

minimum of fifteen hours a month are Ron Austin, Rudy Lime, Carl McLeod, Alex Murphy and Stan Yalof. Most are members of the Palomar Cactus and Succulent Society or the San Diego Cactus and Succulent Society.

When you come to the Wild Animal Park, you may visit the Baja Hill and other botanical gardens for the price of admission to the Park. If you decide to visit the Baja Hill on a warm day, please do not forget to go there first as this garden can get quite warm during the middle of the day.

During the second week of July, the Cactus and Succulent Society of America will sponsor an international convention in San Diego; the Baja Hill will be on the field trip list. For more information on this event or cactus and succulent related items, please
see the affiliate listings in the back of this periodical. □

Joseph A. Betzler has been president of the San Diego Cactus and Succulent Society at various times and is a director of the Cactus and Succulent Society of America. Currently Mr. Betzler works for the Horticulture Department at the Zoological Society of San Diego's Wild Animal Park. He also volunteers at the Baja Garden at the Wild Animal Park.

[Editor's note: Unlike other books checked, *The New Royal Horticultural Society Dictionary of Gardening* editors reject the name *Ferocactus acanthodes*, claiming "misapplied" and using *Ferocactus cylindraceus* from Georg Engelmann.]

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GARDEN TIPS THAT WORK

by MORT BRIGADIER

ON CONTAINER PLANTS: Do not allow the soil to crust over. Loosen the top inch of the soil to let air, water, and sun penetrate. Use a fork or a chopstick to scratch the soil gently. Try not to disturb any shallow roots.

ON PLANTER BOXES: If the soil in the corners of planter boxes remains dry, even after an irrigation, garden writer Betty Newton suggests that wetting agents such as Water In or Slippery Water may correct the problem.

ON TOMATOES: To avoid insect or disease problems, don't grow tomatoes in the same soil they grew in last season. If you need to plant tomatoes in the same place, remove at least a cubic foot of the old soil and replace it with fresh soil.

If you like your tomatoes with a better balance of acid and sugar, let them ripen off the vine for two or three days, according to the UCCE Farm Advisor's office.

Read the seed package (or check the label). Tomatoes are classified as either *determinate* or *indeterminate*. Determinate tomatoes ripen over a relatively short period of time. An indeterminate tomato may continue to flower and produce fruit throughout its growing season.

ON GRAFTING: If a graft of a stone bearing fruit tree is going to be successful, the rootstock must be actively growing and the scion wood must be dormant. You may eliminate the chill requirement for some fruit if you cut and refrigerate a scion when it is dormant and graft it to the host plant when it is actively growing, according to Tom del Hotal of Fantasia Garden.

ON DEAD PLANTS: Many, if not most, dead or dying plants were murdered by overwatering. Plants may recover from wilt but never from overwatering. Wet will rot; dry will not!

ON ROSES: San Diego rosarian, Phil Ash, grows his prizewinning roses in containers and not in the ground. He avoids poor drainage and soil problems. He turns his pots into the sun for even growth.

ON GOPHERS: A rumor started some years ago that chewing gum or bubble gum placed down a gopher hole would choke the gophers. Since then this great-idea-that-doesn't-work has traveled the world over, appeared in countless articles, and has been tried to no avail by untold numbers of people.

Gophers will get suspicious and not feed if they find too much gopher bait in one pile. Trapper Tom Lindenmood of A-All Pest Control suggests using not more than two tablespoons per hole of strychnine alkaloid gopher bait available for sale from the S.D. County Agriculture Department (694-2739).

Gophers will not feed or enter traps if they detect a human scent. Use XO, an odor neutralizer, to remove human scent from traps and surrounding areas. Call 1-800/442-9696 for the name of a retailer in your area.

ON PRUNING AND SHAPING CITRUS TREES: U.C. Master Gardener Harold Berg opens the center of his citrus trees to sun and air by pruning away the center growth. The additional flow of light and air encourages flowering and decreases shelter for pests. To guard against sunburn and to observe better any insect activity on newly exposed wood, paint the trunk and lower branches of citrus with a water base white paint.

Give your citrus trees a frequent bath. Wash the trees during the morning hours with a forceful stream of water to keep dust, dirt, and insects from accumulating on the leaves and twigs.

ON CUTTINGS: Do not root cuttings in water if you plan to transfer them to soil, because their roots become brittle. Root cuttings in a light soil (or non-soil mix). Use the appropriate rooting hormone compound for hard, medium, or soft wood (if you can find it).

ON WATERING: Let tap water rise or lower to room temperature before watering indoor plants. Release pressure from garden hoses when finished watering outdoors. If not emptied, water remaining in a garden hose may get hot enough to cook all but the heartiest plants.

For insect and disease control of landscape plants, wet the soil and not the foliage. Only wet the foliage when water-blasting away insects, dirt, or debris or when misting ferns.

ON HUMUS: Many San Diego soils are woefully

lacking in humus. Work five two-cubic-foot bags of compost into 1000 square feet of sandy or clay soil and let Mother Nature do the rest. Remember to replace the nitrogen in the soil as it is taken out of the soil by the decomposition process. Do not use steer manure unless it has been composted or the salt has been leached out.

ON GYPSUM; Mix a little gypsum into the top inch of potted plants and planter boxes to prevent the top of the soil from crusting.

ON CALCAREOUS CLAY SOIL: Nothing helps calcareous [containing calcium or any calcium compound] clay soils. Brad Monroe, Director of Cuyamaca College's Horticulture Department, suggests landscaping and planting with raised planter boxes. It will require up to 50% of added organic material to support plant material and keep it healthy.

ON GARLIC: Plant garlic throughout the garden to discourage insects. It also might help keep people away.

ON DIRTY HANDS: Use a piece of lemon or lime to remove dirt stains.

ON SOIL TESTS: Test your soil for Ph. Make a soil paste using distilled water. Litmus paper will not give you a precise reading but will indicate whether acid or alkaline. For a more definite test, purchase a pH meter available through catalogues. Cost is from $15 to $65, depending on quality and reliability. Harbor Freight in El Cajon sells a meter for $5.

ON TRANSPLANTS: Transplant after 4:00 p.m. to avoid potential sun stress to both plant and gardener, or plant when the sky is grey or overcast. Water deeply to encourage deep rooting but keep the foliage dry. For insect and disease control, wet the soil and not the plant.□

Mort Brigadier majored in horticulture at Cuyamaca College and has an MBA in management. He is a UCCE Master Gardener.

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GARDENIAS

by ROBERT HORWITZ

WHERE HAVE ALL THE gardenias gone? When I first moved to San Diego in the late forties, the first thing I wanted to have growing in my yard was a prolific gardenia bush. This was because it was the favorite corsage flower for the courting set. Today, I seldom see any gardenias and consequently there is none of that heavenly scent that emanates from them.

There are three types that have been proven to grow well in our area. They are the *Gardenia jasminoides* 'Mystery' and 'Veitchii' and *G. thunbergia*. 'Veitchii' is the smallest of this group, with 'Mystery' somewhat larger and *G. thunbergia* the largest, getting to be ten feet tall under good growing conditions.

If you can meet the growing requirements of the gardenia, you can have a plant that grows well and will produce flowers of a creamy white color that contrast well with the dark green leaves that surround them. Provide acid soil. If you have adobe, plant them in containers. Make sure that there are sufficient chelates in the soil, particularly iron and magnesium so that the leaves will not suffer from chlorosis. Although this is not a hard and fast rule, they should be planted where they get plenty of sun. Reflected heat from house walls and fences can be beneficial too.

Just as flower buds appear is a good time to start feeding with a balanced chemical fertilizer. Keep this up once a month until the flowers start to fall off. Regular watering is essential and when making up the soil mix before planting, make sure that it will drain well.

Gardenias will take pruning well and it helps promote new flower growth when it is done properly. Aphids and weevils are the primary pests and can be controlled with the proper spray.

Those of you that live in condos and apartments where there is a balcony that gets plenty of sun and little wind will find the gardenia to be a good plant to grow under these conditions. A row of containers would make a nice green separation along the balcony railing. An added bonus is that, during the blooming season, you can cut the flowers and float them in shallow vases indoors so that you can enjoy the wonderful aroma and remember when you were young and of a courting age.□

Book Reviews

THE BOOK OF OUTDOOR GARDENING
Smith and Hawken Editors

New York, Workman Publishing, 1996, 514 pages, 301 color photos, 7⅝" x 9⅛", softcover, $19.95

"...nature teaches us to feed our soil—a task at which chemical fertilizers fall short. Nurture the earth itself, and the plants will thrive; it is this simple and enduring premise that is at the heart of organic gardening." This is from the introduction to the book.

This is the book that organic gardeners have been eagerly awaiting. I can think of no better book to give to a novice gardener. The first few pages contain photographs of some of the most beautiful and famous of the world's gardens, excellent inspiration for the pages that follow. The text logically starts with a discussion of soil and goes on to specific information on digging techniques, mulching, fertilizing, pest control, and much, much more. There are plans for various types of gardens and beds, and excellent charts on crop rotation, companion planting, etc. Each chapter starts with a description of a famous gardener, an explanation of their garden philosophy, and usually a great quote from that gardener. The last third of the book is a dictionary of plants broken down by type: perennial, herb, shrub, tree, and bulb. Many color photos are included. A gardener who has this book and *Sunset Western Garden Book* has all the information he needs to create and maintain a successful and beautiful garden

Reviewed by Connie Beck

THE GENUS MATUCANA
Rob Bregman

Rotterdam, A. A. Balkema Publishers, 1996, 150 pages, 71 color photos, 8" x 11¼", hardcover, $75

Hobbyists who grow cacti have been in luck lately. There have been new monographs covering *Gymnocalcium*, *Copiapoa*, *Thelocactus*, and now *Matucana*. *Matucana*, named for a town east of Lima, Peru, is a variable genus of middle-sized cacti, all native to Peru, with showy flowers. They are favored by collectors of cacti because they are easy to grow and bloom reliably over a long period. As is true of many another genus of cacti, the naming has long been in a state of considerable confusion, and the author of this book makes a strong attempt at straightening it all out. At various times, Matucana has been lumped into the very large genus *Borzicactus* or into the smaller genus *Arequipa*, or even into *Oreocereus*. Those of us who have grown the plants over many years have learned to sit tight and not change our labels—sooner or later, the old name will be restored! Rob Bregman treats *Matucana* as a separate entity, and has reduced the genus to nineteen species, each of which he describes and illustrates in detail.

In successive chapters he gives the history of the genus, a detailed description of its morphology, its habitat and distribution, and many particulars on its reproduction, with SEM (scanning electron micrographs) photographs of the seeds. He uses the shape of the seeds to divide the genus into four species groups, which he explains in detail. There are line drawings and a key to guide the reader toward any species he may be trying to identify, along with distribution maps. For each species and variety in the genus the author gives excellent color photographs and line drawings, and even cultural advice. Indeed, it seems that nothing has been overlooked or omitted.

I can recommend this book to anyone with an interest in the genus.

Reviewed by Phyllis Flechsig

GARDENS OF THE SUN
Trevor Nottle

Portland, Timber Press, 1996, 196 pages, 7¼" x 10½". color photos, $29.95

From his own very original Australian perspective, Trevor Nottle shares a fresh and inspiring conceptualization for gardening in solarized climates. This noted horticulturalist recognizes that climates such as our own are truly exceptional. We face alternative challenges as gardeners in each sun belt portion of the world with special considerations for soils, temperature range, and rainfall, both amount and seasonality.

We certainly can create shadows of the brilliant seasonal floral gardens of more temperate climates by using alternative plant materials. But this begs the question, why should we do so? There are so many more interesting and sensitive approaches to creating gardens well-suited to our area.

As Mr. Nottle guides us through the garden elements and development, he fills us with ideas and inspiration from other gardens he has visited or created in similar sun-soaked regions. All efforts are aimed at expanding our focus of garden design to include relaxing, successful, satisfying and stimulating gardens of our own.

Throughout his insightful and often humorous rambles, he teaches us by examples and through practical personal observation. There is a loving respect and wonder for the world of both natural and manmade garden foibles. He constantly challenges us to re-freshen our own ideas of what can be done.

As example, after suggesting several basils and fennels to include in the garden for color, he suggests that "it would be folly to think that there would be enough to cut for

regular use in the kitchen in such decorative schemes. After all you can't eat the stuff and look at it admiringly in the garden, too!"

To embrace his world it is necessary to cast aside outmoded perceptions and "rules" to accommodate the climate and the materials. Toss out old notions such as "brown is bad" or "shaggy is bad" in favor of use of plant materials well suited to the locale. After all, beauty is in the mind of the beholder, but it takes a brave gardener not to follow the current path of the herd. Can you manage to admire and respect the climate we live in and rejoice in bare earth as a garden element without packing in with water intensive plants?

The text is rife with ideas and suggestions, interesting plants, and fun! A most enjoyable and educational adventure. *Reviewed by Lucy Warren*

CITRUS
Lance Waldheim
Tucson, Ironwood Press, 1996, 112 pages, 100+ color photos, 60+ b & w illustrations, 8¾" x 10⅞", softcover, $16.95

This is an excellent addition to the list of titles now available for those of us interested in gardening in the Southwest. The author is knowledgeable about the various aspects of our weather conditions, soils, temperature changes, micro-climates, and conditions that make gardening here a whole new experience. This is especially true of gardeners moving here from other areas. The beauty of citrus trees with their colorful fruits is one of the attractions of Southern California, and their beauty is enhanced by shiny evergreen foliage, contrasting with the bright colors of the fruit. In the blooming period, the fragrance of the flowers adds its contribution and symbolizes gardening at its best. The book includes information about the history of citrus, the many varieties available, and planting and care in a format that captures attention no matter what your interest. The author is a California gardener, writer, lecturer, and past assistant editor of *Sunset*. The material presented in this volume is superior in covering the many aspects of growing citrus, and will encourage all to check out the fresh citrus in the market with new interest.

Reviewed by Marianne D. Truby

Photo at the Baja Garden by Joseph A. Betzler.

COMMUICATIONS . . .

IN MEMORY OF JOHN GAGLIARDI

John J. Gagliardi was a past editor of *California Garden* magazine and a board director of the San Diego Floral Association.

He had been an integral part of the composition of the *New York Times* newspaper, distributed worldwide.

The *California Garden* magazine was fortunate indeed to have access to his fine mind and amiable presence.

He passed on May 15, 1997 after an extended illness. Our sympathies reach out to his widow, Helen, and their entire family.

John left gentle footprints where he walked. He will be greatly missed.

Jo Rathman

WE WELCOME LETTERS PERTAINING TO GARDENS!

We request comments from those who feel that we have provided incorrect information. The goal is to give readers the best gardening knowledge available.

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Send your best garden ideas to *California Garden*, postmarked by August 30, 1997.

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1997

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Monthly meetings to visit gardens and see flowers. Call for information.

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Pres: Cindy Drake 271-8933
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Quail Gardens

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